MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN

ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2017

ALLEGAN CRC (0301)

Spring, 2018

Allegan CRC

In care of:
Municipal Employees' Retirement System of Michigan
1134 Municipal Way
Lansing, Michigan 48917

This report presents the results of the Annual Actuarial Valuation, prepared as of December 31, 2017. The report includes the determination of liabilities and contribution rates resulting from the participation of Allegan CRC (0301) in the Municipal Employees' Retirement System of Michigan ("MERS"). MERS is an independent, professional retirement services company that was created to administer retirement plans for Michigan municipalities on a not-for-profit basis. This report contains the minimum actuarially determined contribution requirement, in alignment with the MERS Plan Documents, funding policy and Michigan Constitution. Allegan CRC is responsible for the employer contributions needed to provide MERS benefits for its employees and former employees under the Michigan Constitution and the MERS Plan Document.

The purpose of the December 31, 2017 annual actuarial valuation is to:

- Measure funding progress
- Establish contribution requirements for the fiscal year beginning January 1, 2019
- Provide actuarial information in connection with applicable Governmental Accounting Standards Board (GASB) statements

This valuation report should not be relied upon for any other purpose. Reliance on information contained in this report by anyone for anything other than the intended purpose could be misleading.

The valuation uses financial data, plan provision data, and participant data as of December 31, 2017 furnished by MERS. In accordance with Actuarial Standards of Practice No. 23, the data was checked for internal and year to year consistency as well as general reasonableness, but was not otherwise audited. CBIZ Retirement Plan Services does not assume responsibility for the accuracy or completeness of the data used in this valuation.

The actuarial assumptions and methods are adopted by the MERS Retirement Board, and are reviewed every five years in an Experience Study. The most recent study was completed in 2015. Please refer to the division-specific assumptions described in table(s) in this report, and to the Appendix on the MERS website at:
www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2017AnnualActuarialValuation-Appendix.pdf.

The actuarial assumptions used for this valuation produce results that we believe are reasonable.

To the best of our knowledge, this report is complete and accurate, was prepared in conformity with generally recognized actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and is in compliance with Act No. 220 of the Public Acts of 1996, as amended, and the MERS Plan Document as revised. All of the undersigned are members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The Retirement Board of the Municipal Employees' Retirement System of Michigan confirms that the System provides for payment of the required employer contribution as described in Section 20m of Act No. 314 of 1965 (MCL 38.1140m).

This information is purely actuarial in nature. It is not intended to serve as a substitute for legal, accounting or investment advice.

This report was prepared at the request of the Retirement Board and may be provided only in its entirety by the municipality to other interested parties (MERS customarily provides the full report on request to associated third parties such as the auditor for the municipality). CBIZ Retirement Plan Services is not responsible for the consequences of any unauthorized use.

You should notify MERS if you disagree with anything contained in the report or are aware of any information that would affect the results of the report that have not been communicated to us. If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, that conditions have changed since the calculations were made, that the information provided in this report is inaccurate or is in anyway incomplete, or if you need further information in order to make an informed decision on the subject matter in this report, please contact your Regional Manager at 1.800.767.MERS (6377).

Sincerely,

Cathy Nagy, MAAA, FSA
Jim Koss, MAAA, ASA
Curtis Powell, MAAA, EA

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Executive Summary

Funded Ratio and Required Employer Contributions

The MERS Defined Benefit Plan is an agent multiple-employer plan, meaning that assets are pooled for investment purposes but separate accounts are maintained for each individual employer. Each municipality is responsible for their own plan liabilities; MERS does not borrow from one municipality's account to pay for another.

The funded ratio of a plan is the percentage of the dollar value of the accrued benefits that is covered by the actuarial value of assets.

Your Funded Ratio:

	12/31/2017 *	12/31/2016
Funded Ratio	60%	59%

* Reflects assets from Surplus divisions, if any.

Michigan Law requires that pension plans be pre-funded, meaning money is set aside now to pay for future benefits. Pension plans are usually funded by employer and employee contributions, and investment income.

How quickly a plan attains the 100% funding goal depends on many factors such as:

- The current funded ratio
- The future experience of the plan
- The amortization period

It is more important to look at the trend in the funded ratio over a period of time than at a particular point in time.

Your Required Employer Contributions:

Your computed employer contributions are shown in the following table. Employee contributions, if any, are in addition to the computed employer contributions. Changes to the assumptions and methods based on the 2015 Experience Study were first reflected in the December 31, 2015 valuations. The impact of these changes is being phased-in over a 5 year period. The phase-in allows the employer to spread the impact of the new assumptions over 5 fiscal years. This valuation reflects the third year of the phase-in.

Your minimum required contribution is the amount in the “Phase-in” columns. By default, MERS will invoice you the phased-in contribution amount, but strongly encourages you to contribute more than the minimum required contribution. If for 2018 your municipality is making employer contributions based on rates without the phase-in applied, contact MERS to ensure the No Phase-in rate is used again for 2019 and not the defaulted phase-in rates.

	Percentage of Payroll				Monthly $ Based on Projected Payroll			
	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in
Valuation Date:	12/31/2017	12/31/2017	12/31/2016	12/31/2016	12/31/2017	12/31/2017	12/31/2016	12/31/2016
Fiscal Year Beginning:	January 1, 2019	January 1, 2019	January 1, 2018	January 1, 2018	January 1, 2019	January 1, 2019	January 1, 2018	January 1, 2018
Division								
01 - All Employees hired pr	-	-	-	-	$ 68,684	$ 70,878	$ 43,107	$ 46,398
10 - Slrd	-	-	-	-	0	0	12,718	13,717
11 - Non-Union	-	-	-	-	0	0	3,957	4,434
12 - All Employees Post 12/	-	-	-	-	2,256	2,286	2,305	2,350
13 - All Employees after 2/	4.00%	4.00%	3.43%	3.43%	2,106	2,106	1,340	1,340
Municipality Total					**$ 73,046**	**$ 75,270**	**$ 63,427**	**$ 68,239**

Employee contribution rates reflected in the valuations are shown below:

	Employee Contribution Rate	
Valuation Date:	12/31/2017	12/31/2016
Division		
01 - All Employees hired pr	4.70%	4.70%
10 - Slrd	4.70%	4.70%
11 - Non-Union	4.70%	4.70%
12 - All Employees Post 12/	6.00%	6.00%
13 - All Employees after 2/	4.00%	4.00%

The employer may contribute more than the minimum required contributions, as these additional contributions will earn investment income and may result in lower future contribution requirements. Employers making contributions in excess of the minimum requirements may elect to apply the excess contribution immediately to a particular division, or segregate the excess into one or more of what

MERS calls ”Surplus” divisions. An election in the first case would immediately reduce any unfunded accrued liability and lower the amortization payments throughout the remaining amortization period. An election to set up Surplus divisions would not immediately lower future contributions, however the assets from the Surplus divisions could be transferred to an unfunded division in the future to reduce the unfunded liability in future years, or to be used to pay all or a portion of the minimum required contribution in a future year. For purposes of this report, the assets in any Surplus division have been included in the municipality’s total assets, unfunded accrued liability and funded status, however, these assets are not used in calculating the minimum required contribution.

MERS strongly encourages employers to contribute more than the minimum contribution shown above.

Assuming that experience of the plan meets actuarial assumptions:

- To accelerate to a 100% funding ratio in 10 years, estimated monthly employer contributions for the fiscal year beginning in 2019 for the entire employer would be $119,845, instead of $75,270.

If you are interested in making additional contributions, please contact MERS and they can assist you with evaluating your options.

How and Why Do These Numbers Change?

In a defined benefit plan, contributions vary from one annual actuarial valuation to the next as a result of the following:

- Changes in benefit provisions (see Table 2)
- Changes in actuarial assumptions and methods (see the Appendix)
- Experience of the plan (investment experience and demographic experience); this is the difference between actual experience of the plan and the actuarial assumptions. For example:
    - o Lower actual investment returns would result in higher required employer contributions, and vice-versa.
    - o Smaller than assumed pay increases would lower required employer contributions.
    - o Reductions in the number of active employees would lower required contribution dollars, but would usually increase the contribution rate expressed as a percentage of (the now lower) payroll.
    - o Retirements at earlier ages than assumed would usually increase required employer contributions.
    - o More non-vested terminations of employment than assumed would decrease required contributions.
    - o More disabilities or survivor (death) benefits than assumed would increase required contributions.
    - o Longer lifetimes after retirement than assumed would increase required employer contributions.

Actuarial valuations do not affect the ultimate cost of the plan; the benefit payments (current and future) determine the cost of the plan. Actuarial valuations only affect the timing of the contributions into the plan. Because assumptions are for the long term, plan experience will not match the actuarial assumptions in any given year (except by coincidence). Each annual actuarial valuation will adjust the required employer contributions up or down based on the prior year's actual experience.

Comments on Investment Return Assumption and Asset Smoothing

A defined benefit plan is funded by employer contributions, participant contributions, and investment earnings. Investment earnings have historically provided **more than half** of the funding. The larger the share of benefits being provided from investment returns, the smaller the required contributions, and vice versa. Determining the contributions required to prefund the promised retirement benefits requires an assumption of what investment earnings are expected to add to the fund over a long period of time. This is called the **Investment Return Assumption**.

The MERS Investment Return Assumption is **7.75%** per year. This, along with all of our other actuarial assumptions, is reviewed every five years in an Experience Study that compares the assumptions used against actual experience and recommends adjustments if necessary. If your municipality would like to explore contributions at lower investment return assumptions, please review the budget projection scenarios later in this report.

To avoid dramatic spikes and dips in annual contribution requirements due to short term fluctuations in asset markets, MERS applies a technique called **asset smoothing**. This spreads out each year's investment gains or losses over the prior year and the following four years. This smoothing method is used to determine your actuarial value of assets (valuation assets), which is then used to determine both your funded ratio and your required contributions. The (smoothed) **actuarial rate of return for 2017 was 6.08%, while the actual market rate of return was 13.07%**. To see historical details of the market rate of return, compared to the smoothed actuarial rate of return, refer to this report's Appendix, or visit our Defined Benefit resource page on the MERS website.

As of December 31, 2017 the actuarial value of assets is 101% of market value due to asset smoothing. This means that meeting the actuarial assumption in the next few years will require average annual market returns that exceed the 7.75% investment return assumption, or contribution requirements will continue to increase.

If the December 31, 2017 valuation results were based on market value instead of the actuarial value:

- The funded percent of your entire municipality would be 60% (instead of 60%); and
- Your total employer contribution requirement for the fiscal year starting January 1, 2019 would be $914,808 (instead of $903,240).

Risk Characteristics of Defined Benefit Plans

It is important to understand that Defined Benefit retirement plans, the plan sponsor, and the plan participants are exposed to certain risks. While risks cannot be eliminated entirely, they can be managed through various strategies. Below are a few examples of risk (this is not an all-inclusive list):

- Economic - investment return, wage inflation, etc.
- Demographic - longevity, disability, retirement, etc.
- Plan Sponsor and Employees - contribution volatility, attract/retain employees, etc.

The MERS Retirement Board adopts certain assumptions and methods to manage the economic and demographic risks, and the contribution volatility risks. For example, the investment risk is the largest economic risk and is managed by having a balanced portfolio and a clearly defined investment strategy. Demographic risks are managed by preparing special studies called experience studies on a regular basis to determine if the assumptions used are reasonable compared to the experience. An Experience Study is completed every five years to review the assumptions and methods. The next Experience Study will be completed in 2020.

Risk can also be managed through a plan design that provides benefits that are sustainable in the long run.

The Actuarial Standards Board has issued Actuarial Standards of Practice (ASOP) No. 51. This standard will be effective for any actuarial work with a measurement date on or after November 1, 2018. This means, the December 31, 2018 and later annual actuarial valuation reports for MERS will have to comply with this standard. This standard will require the actuary to identify risks that, in the actuary's professional judgment may significantly impact the plan's future financial condition. The actuary will have to assess the potential effects of the identified risks on the plan's future financial condition. The assessment may or may not be based on numerical calculations. However, the assessment should reflect the specifics of the plan (i.e. funded status, plan demographics, funding policy, etc.). If the actuary concludes that numerical calculations are necessary to assess the risk, the actuary can use various methods to quantify the risk such as scenario tests, sensitivity tests, stress tests, etc.

Some of these risk assessment measures have already been incorporated in the MERS annual valuation reports. For example, the projections of funded percentage and employer contributions shown on the following pages could be used to gauge the risk associated with long term investment rates of return different than the assumed 7.75% annual rate. A history of the municipality's funded percentage as shown in Table 7, could indicate the trend in funded status over time.

Alternate Scenarios to Estimate the Potential Volatility of Results ("What If Scenarios")

The calculations in this report are based on assumptions about long-term economic and demographic behavior. These assumptions will never materialize in a given year, except by coincidence. Therefore the results will vary from one year to the next. The volatility of the results depends upon the characteristics of the plan. For example:

- Open divisions that have substantial assets compared to their active employee payroll will have more volatile employer contribution rates due to investment return fluctuations.
- Open divisions that have substantial accrued liability compared to their active employee payroll will have more volatile employer contribution rates due to demographic experience fluctuations.
- Small divisions will have more volatile contribution patterns than larger divisions because statistical fluctuations are relatively larger among small populations.
- Shorter amortization periods result in more volatile contribution patterns.

The analysis in this section is intended to review the potential volatility of the actuarial valuation results. It is important to note that calculations in this report are mathematical estimates based upon assumptions regarding future events, which may or may not materialize. Actuarial calculations can and do vary from one valuation to the next, sometimes significantly depending on the group's size.

Many assumptions are important in determining the required employer contributions. In the table below, we show the impact of varying the Investment Return Assumption. Lower investment returns would result in higher required employer contributions, and vice-versa.

The relative impact of each investment return scenario below will vary from year to year, as the participant demographics change. The impact of each scenario should be analyzed for a given year, not from year to year. The results in the table are based on the December 31, 2017 valuation, and are for the municipality in total, not by division. These results do not reflect a 5-year phase in of the impact of the new actuarial assumptions.

	Assumed Future Annual Smoothed Investment Return Assumption			
	Lower Future Annual Returns		**Valuation Assumption**	**Higher Returns**
12/31/2017 Valuation Results	**5.75%**	**6.75%**	**7.75%**	**8.75%**
Accrued Liability	$ 29,213,052	$ 26,441,877	$ 24,081,318	$ 22,057,749
Valuation Assets[1]	$ 14,512,870	$ 14,512,870	$ 14,512,870	$ 14,512,870
Unfunded Accrued Liability	$ 14,700,182	$ 11,929,007	$ 9,568,448	$ 7,544,879
Funded Ratio	50%	55%	60%	66%
Monthly Normal Cost	$ 23,977	$ 17,455	$ 12,383	$ 8,485
Monthly Amortization Payment	$ 76,349	$ 68,693	$ 60,889	$ 53,354
Total Employer Contribution[2]	$ 100,326	$ 86,148	$ 75,270	$ 61,839

1 The Valuation Assets include assets from Surplus divisions, if any.

2 If assets exceed accrued liabilities for a division, the division's amortization payment is negative and is used to reduce the division's employer contribution requirement. If the overfunding credit is larger than the normal cost, the division's full credit is included in the municipality's amortization payment above but the division's total contribution requirement is zero. This can cause the displayed normal cost and amortization payment to not add up to the displayed total employer contribution.

Projection Scenarios

The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate assumed long-term investment return assumption scenarios. All four projections take into account the past investment losses that will continue to affect the actuarial rate of return in the short term. Under the 7.75% scenarios in the table on the next page, two sets of projections are shown:

- Based on the phase-in over 5 fiscal years (beginning in 2017) of the increased contribution requirements associated with the new actuarial assumptions. This projects your minimum required contribution.
- Based on no phase-in of the increased contribution requirements.

The 7.75% scenarios provide an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.75% market return. The other two scenarios may be useful if the municipality chooses to budget more conservatively, and make contributions in addition to the minimum requirements. The 6.75% and 5.75% projections provide an indication of the potential required employer contribution if MERS were to realize annual investment returns of 6.75% and 5.75% over the long-term.

The projections are shown both in tabular and graphical form in total for the employer. The tables show projections for six years. The graphs show projections for twenty five years.

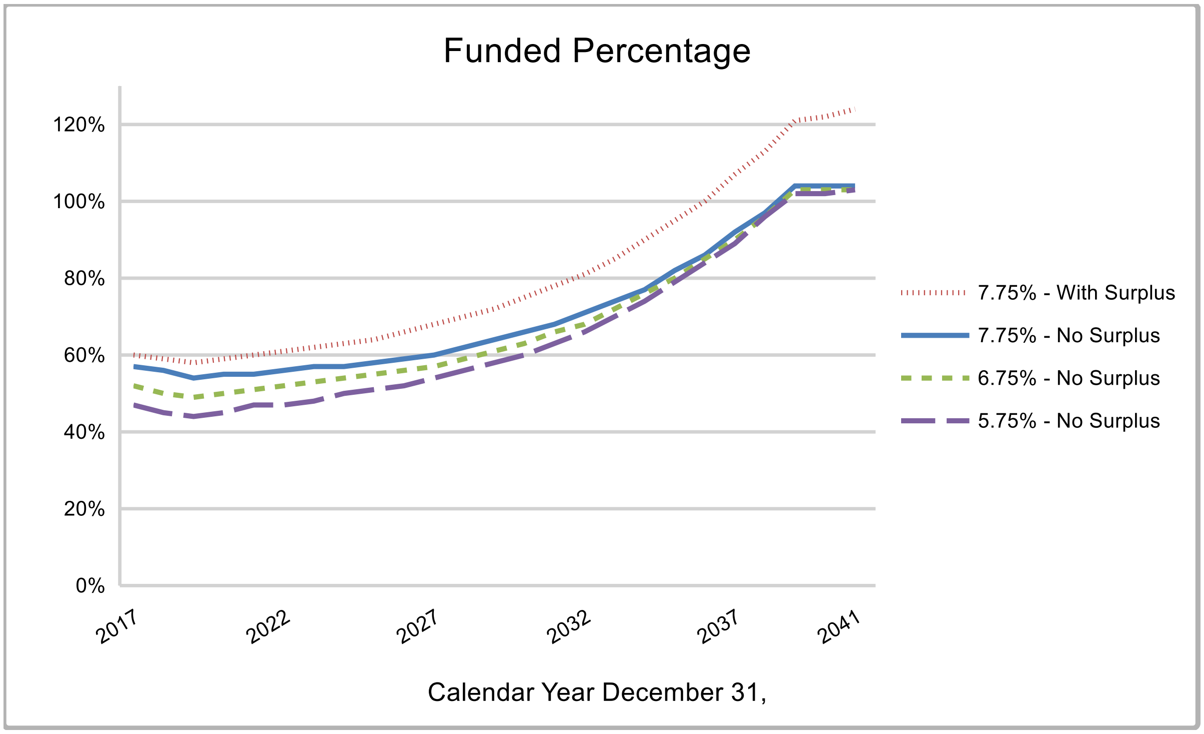
Your municipality includes one or more Surplus divisions. The assets in a Surplus division may be used to reduce future employer contributions or to accelerate the date by which the municipality becomes 100% funded. The timing and use of these Surplus assets is discretionary.

The Funded Percentage graph shows projections of funded status under the 7.75% investment return assumption, both including the Surplus assets (contributed as of the valuation date), and without the Surplus assets. The graph including the Surplus assets assumes these Surplus assets grow with interest and are not used to lower future employer contributions. We modeled the projections including the Surplus assets in this fashion because the use of these assets is discretionary by the employer and we do not know when and how the employer will use them. Once the employer uses these Surplus assets, any future employer contributions are expected to be lower than those shown in the projections.

Valuation Year Ending 12/31	Fiscal Year Beginning 1/1	Actuarial Accrued Liability	Valuation Assets[2]	Funded Percentage	Computed Annual Employer Contribution
7.75%[1]					
WITH 5-YEAR PHASE-IN					
2017	2019	$ 24,081,318	$ 13,651,836	57%	$ 876,552
2018	2020	24,200,000	13,400,000	56%	956,000
2019	2021	24,300,000	13,000,000	54%	1,020,000
2020	2022	24,500,000	13,300,000	54%	1,050,000
2021	2023	24,600,000	13,600,000	55%	1,070,000
2022	2024	24,800,000	13,800,000	56%	1,110,000
NO 5-YEAR PHASE-IN					
2017	2019	$ 24,081,318	$ 13,651,836	57%	$ 903,240
2018	2020	24,200,000	13,400,000	56%	967,000
2019	2021	24,300,000	13,100,000	54%	1,020,000
2020	2022	24,500,000	13,300,000	55%	1,040,000
2021	2023	24,600,000	13,600,000	55%	1,070,000
2022	2024	24,800,000	13,900,000	56%	1,100,000
6.75%[1]					
NO 5-YEAR PHASE-IN					
2017	2019	$ 26,441,877	$ 13,651,836	52%	$ 1,033,776
2018	2020	26,600,000	13,300,000	50%	1,110,000
2019	2021	26,700,000	13,100,000	49%	1,170,000
2020	2022	26,800,000	13,400,000	50%	1,200,000
2021	2023	26,900,000	13,800,000	51%	1,230,000
2022	2024	27,100,000	14,000,000	52%	1,270,000
5.75%[1]					
NO 5-YEAR PHASE-IN					
2017	2019	$ 29,213,052	$ 13,651,836	47%	$ 1,203,912
2018	2020	29,300,000	13,200,000	45%	1,290,000
2019	2021	29,400,000	13,000,000	44%	1,350,000
2020	2022	29,500,000	13,400,000	45%	1,380,000
2021	2023	29,600,000	13,800,000	47%	1,420,000
2022	2024	29,700,000	14,100,000	47%	1,460,000

[1] Represents both the interest rate for discounting liabilities and the future investment return assumption on the Market Value of assets.

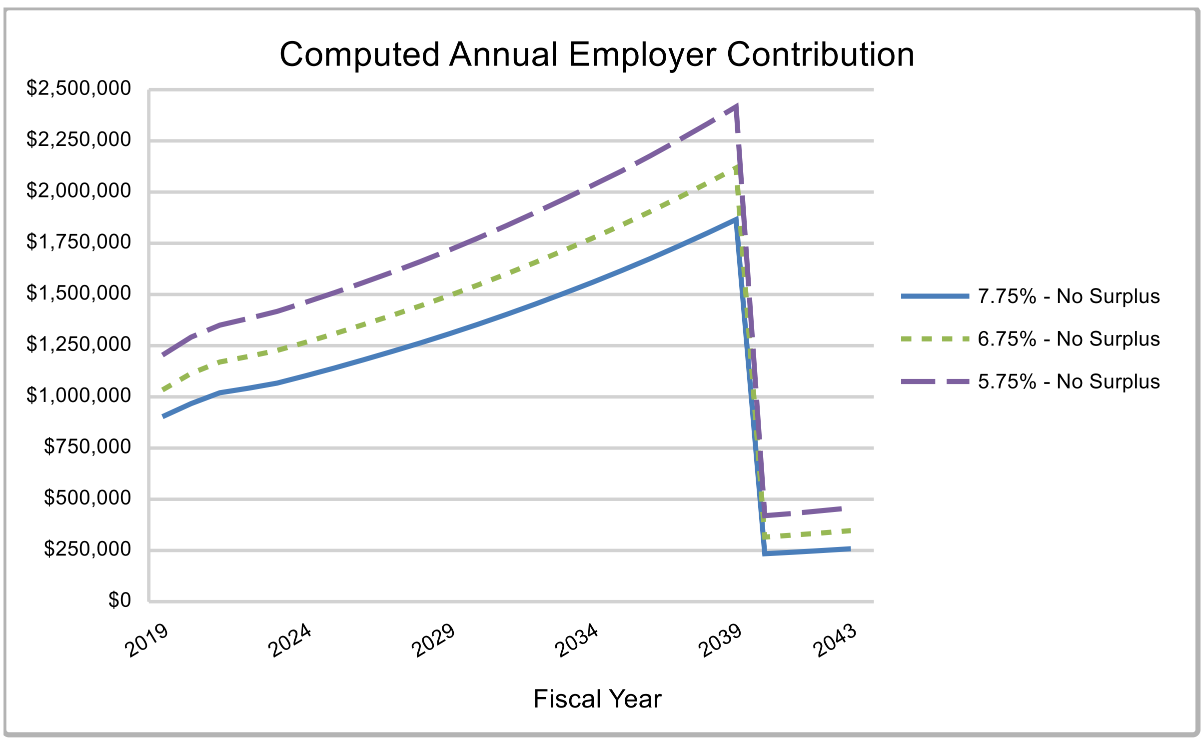
[2] Valuation Assets do not include assets from Surplus divisions, if any.



Notes:

All projected funded percentages are shown with no phase-in.

Assumes assets from Surplus divisions will not be used to lower employer contributions during the projection period.



Notes:

All projected contributions are shown with no phase-in.

Projected employer contributions do not reflect the use of any assets from the Surplus divisions.

Employer Contribution Details For the Fiscal Year Beginning January 1, 2019

Table 1

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions[1]: Employer Normal Cost	Employer Contributions[1]: Payment of the Unfunded Accrued Liability[4]	Employer Contributions[1]: Computed Employer Contribut. No Phase-In	Computed Employer Contribut. With Phase-In	Blended ER Rate No Phase-In[5]	Blended ER Rate With Phase-In[5]	Employee Contribut. Conversion Factor[2]
Percentage of Payroll									
01 - All Employees hire	11.14%	4.70%	-	-	-	-	34.78%	33.75%	
12 - All Employees Post	11.64%	6.00%	-	-	-	-	34.78%	33.75%	
13 - All Employees afte	8.08%	4.00%	4.08%	-0.08%	4.00%	4.00%	34.78%	33.75%	0.74%
Estimated Monthly Contribution[3]									
01 - All Employees hire			$ 8,035	$ 62,843	$ 70,878	$ 68,684			
12 - All Employees Post			2,200	86	2,286	2,256			
13 - All Employees afte			2,148	(42)	2,106	2,106			
Total Municipality			**$ 12,383**	**$ 60,889**	**$ 75,270**	**$ 73,046**			
Estimated Annual Contribution[3]			**$ 148,596**	**$ 730,668**	**$ 903,240**	**$ 876,552**			

1 The above employer contribution requirements are in addition to the employee contributions, if any.

2 If employee contributions are increased/decreased by 1.00% of pay, the employer contribution requirement will decrease/increase by the Employee Contribution Conversion Factor. The conversion factor is usually under 1%, because employee contributions may be refunded at termination of employment, and not used to fund retirement pensions. Employer contributions will all be used to fund pensions.

3 For divisions that are open to new hires, estimated contributions are based on projected fiscal year payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts. For divisions that will have no new hires (i.e. closed divisions), invoices will be based on the above dollar amounts which are based on projected fiscal year payroll. See description of Open Divisions and Closed Divisions in the Appendix.

4 If projected assets exceed projected liabilities as of the beginning of the January 1, 2019 fiscal year, the negative unfunded accrued liability is treated as overfunding credit and is used to reduce the contribution. This amortization is used to reduce the employer contribution rate. Note that if the overfunding credit is larger than the normal cost, the full credit is shown above but the total contribution requirement is zero. This will cause the displayed normal cost and unfunded accrued liability contributions to not add across.

5 For linked divisions, the employer will be invoiced the Computed Employer Contribution with Phase-in rate shown above for each linked division (a contribution rate for the open division; a contribution dollar for the closed-but-linked division), unless the employer elects to contribute the Blended Employer Contribution rate shown above, by contacting MERS at 800-767-MERS (6377).

Please see the Comments on Asset Smoothing in the Executive Summary of this report.

Benefit Provisions

Table 2

01 - All Employees hired pre 2013: Closed to new hires, linked to Division 13	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	4.70%	4.70%
Act 88:	Yes (Adopted 2/15/1971)	Yes (Adopted 2/15/1971)

10 - Slrd: Closed to new hires	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	4.70%	4.70%
Act 88:	Yes (Adopted 2/15/1971)	Yes (Adopted 2/15/1971)

11 - Non-Union: Closed to new hires	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	4.70%	4.70%
Act 88:	Yes (Adopted 2/15/1971)	Yes (Adopted 2/15/1971)

Table 2 (continued)

12 - All Employees Post 12/31/2012: Closed to new hires, linked to Division 13

	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	6%	6%
Act 88:	Yes (Adopted 2/15/1971)	Yes (Adopted 2/15/1971)

13 - All Employees after 2/1/16: Open Division, linked to Division 01, 12

	2017 Valuation	2016 Valuation
Benefit Multiplier:	1.50% Multiplier (80% max)	1.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	4%	4%
Act 88:	Yes (Adopted 2/15/1971)	Yes (Adopted 2/15/1971)

Participant Summary

Table 3

Division	2017 Valuation		2016 Valuation		2017 Valuation		
	Number	Annual Payroll[1]	Number	Annual Payroll[1]	Average Age	Average Benefit Service[2]	Average Eligibility Service[2]
01 - All Employees hired							
Active Employees	31	$ 1,564,032	26	$ 1,237,391	50.5	15.6	15.6
Vested Former Employees	3	36,060	4	56,518	54.8	12.8	12.8
Retirees and Beneficiaries	76	1,873,501	57	1,242,043	70.5		
10 - Slrd							
Active Employees	0	$ 0	5	$ 266,322	0.0	0.0	0.0
Vested Former Employees	0	0	1	16,355	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	15	428,555	0.0		
11 - Non-Union							
Active Employees	0	$ 0	3	$ 283,136	0.0	0.0	0.0
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	2	93,580	0.0		
12 - All Employees Post 1							
Active Employees	10	$ 496,976	11	$ 509,180	42.2	3.1	3.1
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
13 - All Employees after							
Active Employees	10	$ 351,640	4	$ 117,308	48.0	0.8	0.8
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Total Municipality							
Active Employees	**51**	**$ 2,412,648**	**49**	**$ 2,413,337**	**48.4**	**10.3**	**10.3**
Vested Former Employees	**3**	**36,060**	**5**	**72,873**	**54.8**	**12.8**	**12.8**
Retirees and Beneficiaries	**76**	**1,873,501**	**74**	**1,764,178**	**70.5**		
Total Participants	**130**		**128**				

1 Annual payroll for active employees; annual deferred benefits payable for vested former employees; annual benefits being paid for retirees and beneficiaries.

2 Description can be found under Miscellaneous and Technical Assumptions in the Appendix.

Reported Assets (Market Value)

Table 4

Division	2017 Valuation		2016 Valuation	
	Employer and Retiree[1]	Employee[2]	Employer and Retiree[1]	Employee[2]
01 - All Employees hired pre 2013	$ 12,004,813	$ 1,251,156	$ 7,857,125	$ 890,130
10 - Slrd	0	0	2,327,220	211,753
11 - Non-Union	0	0	1,369,603	266,848
12 - All Employees Post 12/31/2012	117,864	97,633	56,865	66,121
13 - All Employees after 2/1/16	14,766	12,781	3,294	3,300
S1 - Surplus - Unassoc.	851,395	0		
Municipality Total	**$ 12,988,838**	**$ 1,361,570**	**$ 11,614,107**	**$ 1,438,152**
Combined Assets	**$14,350,408**		**$13,052,259**	

[1] Reserve for Employer Contributions and Benefit Payments

[2] Reserve for Employee Contributions

The December 31, 2017 valuation assets (actuarial value of assets) are equal to 1.011321 times the reported market value of assets (compared to 1.077095 as of December 31, 2016). The derivation of valuation assets is described, and detailed calculations of valuation assets are shown, in the Appendix.

Assets in the Surplus division(s) are employer assets that have been reserved to be used by the employer at some point in the future to stabilize increases in contributions. These assets are not used in calculating the employer contribution for the fiscal year beginning January 1, 2019.

Flow of Valuation Assets

Table 5

Year Ended 12/31	Employer Contributions Required	Employer Contributions Additional	Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
2007	$ 232,312		$ 135,324	$ 1,155,982	$ (825,865)	$ (57,599)	$ 39,159	$ 14,962,854
2008	266,631		140,905	635,711	(905,049)	0	20,098	15,121,150
2009	275,858		126,787	559,642	(1,017,804)	0	0	15,065,633
2010	306,808		118,982	694,909	(1,151,050)	0	0	15,035,282
2011	323,762	$ 0	107,108	652,470	(1,305,425)	(11,433)	0	14,801,764
2012	378,332	0	104,238	568,174	(1,393,713)	0	0	14,458,795
2013	446,578	0	109,774	785,426	(1,483,870)	0	81,080	14,397,783
2014	498,149	0	117,653	777,876	(1,501,450)	0	0	14,290,011
2015	565,070	80,591	119,593	652,747	(1,590,656)	0	0	14,117,356
2016	622,534	255,000	121,938	667,754	(1,726,059)	0	0	14,058,523
2017	707,723	566,000	121,658	807,855	(1,804,713)	(828)	56,652	14,512,870

Notes:

Transfers in and out are usually related to the transfer of participants between municipalities, and to employer and employee payments for service credit purchases (if any) that the governing body has approved.

Additional employer contributions, if any, are shown separately starting in 2011. Prior to 2011, additional contributions are combined with the required employer contributions.

The investment income column reflects the recognized investment income based on Valuation Assets. It does not reflect the market value investment return in any given year.

The Valuation Assets include assets from Surplus divisions, if any.

Actuarial Accrued Liabilities and Valuation Assets
As of December 31, 2017

Table 6

Division	Actuarial Accrued Liability	Valuation Assets[1]	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
01 - All Employees hired pre 2013				
Active Employees	$ 5,062,457	$ 1,149,920	22.7%	$ 3,912,537
Vested Former Employees	244,876	76,696	31.3%	168,180
Retirees And Beneficiaries	18,493,845	12,154,884	65.7%	6,338,961
Pending Refunds	24,540	24,540	100.0%	0
Total	**$ 23,825,718**	**$ 13,406,040**	**56.3%**	**$ 10,419,678**
12 - All Employees Post 12/31/2012				
Active Employees	$ 224,631	$ 209,536	93.3%	$ 15,095
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	8,401	8,401	100.0%	0
Total	**$ 233,032**	**$ 217,937**	**93.5%**	**$ 15,095**
13 - All Employees after 2/1/16				
Active Employees	$ 21,980	$ 27,271	124.1%	$ (5,291)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	588	588	100.0%	0
Total	**$ 22,568**	**$ 27,859**	**123.4%**	**$ (5,291)**
S1 - Surplus - Unassoc.				
Total	**$ 0**	**$ 861,034**		**$ (861,034)**
Total Municipality				
Active Employees	**$ 5,309,068**	**$ 1,386,727**	**26.1%**	**$ 3,922,341**
Vested Former Employees	**244,876**	**76,696**	**31.3%**	**168,180**
Retirees and Beneficiaries	**18,493,845**	**12,154,884**	**65.7%**	**6,338,961**
Pending Refunds	**33,529**	**33,529**	**100.0%**	**0**
Surplus Assets	**0**	**861,034**		**(861,034)**
Total	**$ 24,081,318**	**$ 14,512,870**	**60.3%**	**$ 9,568,448**
The following results show the combined accrued liabilities and assets for each set of linked divisions. These results are already included in the table above.				
Linked Divisions 13, 01, 12				
Active Employees	$ 5,309,068	$ 1,386,727	26.1%	$ 3,922,341
Vested Former Employees	244,876	76,696	31.3%	168,180
Retirees and Beneficiaries	18,493,845	12,154,884	65.7%	6,338,961
Pending Refunds	33,529	33,529	100.0%	0
Total	**$ 24,081,318**	**$ 13,651,836**	**56.7%**	**$ 10,429,482**

[1] Includes both employer and employee assets.

Please see the Comments on Asset Smoothing in the Executive Summary of this report.

Actuarial Accrued Liabilities - Comparative Schedule

Table 7

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2003	$ 12,914,970	$ 12,761,760	99%	$ 153,210
2004	14,453,113	13,195,275	91%	1,257,838
2005	15,269,350	13,649,053	89%	1,620,297
2006	15,911,593	14,283,541	90%	1,628,052
2007	17,515,567	14,962,854	85%	2,552,713
2008	18,652,044	15,121,150	81%	3,530,894
2009	19,117,084	15,065,633	79%	4,051,451
2010	19,850,984	15,035,282	76%	4,815,702
2011	20,463,223	14,801,764	72%	5,661,459
2012	20,508,865	14,458,795	71%	6,050,070
2013	21,261,541	14,397,783	68%	6,863,758
2014	21,887,525	14,290,011	65%	7,597,514
2015	23,313,151	14,117,356	61%	9,195,795
2016	23,769,068	14,058,523	59%	9,710,545
2017	24,081,318	14,512,870	60%	9,568,448

Notes: Actuarial assumptions were revised for the 2004, 2008, 2009, 2010, 2011, 2012 and 2015 actuarial valuations.

The Valuation Assets include assets from Surplus divisions, if any.

Division 01 - All Employees hired pre 2013

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	$ 12,555,133	$ 10,752,259	86%	$ 1,802,874
2008	13,265,800	10,681,457	81%	2,584,343
2009	12,955,621	10,403,717	80%	2,551,904
2010	13,462,933	10,355,127	77%	3,107,806
2011	13,946,469	10,138,093	73%	3,808,376
2012	13,808,276	9,907,258	72%	3,901,018
2013	14,425,090	9,879,093	69%	4,545,997
2014	15,031,444	9,798,944	65%	5,232,500
2015	16,011,780	9,647,878	60%	6,363,902
2016	16,356,490	9,421,625	58%	6,934,865
2017	23,825,718	13,406,040	56%	10,419,678

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 actuarial valuations.

Table 9-01: Computed Employer Contributions - Comparative Schedule

Valuation Date	Active Employees		Computed Employer	Employee Contribution
December 31	Number	Annual Payroll	Contribution[1]	Rate[2]
2007	50	$ 2,063,128	10.05%	4.70%
2008	46	2,104,198	12.19%	4.70%
2009	42	1,788,730	13.40%	4.70%
2010	36	1,532,368	17.02%	4.70%
2011	37	1,517,838	19.99%	4.70%
2012	36	1,484,609	21.88%	4.70%
2013	38	1,670,880	$ 31,156	4.70%
2014	35	1,602,415	$ 35,105	4.70%
2015	30	1,327,579	$ 42,686	4.70%
2016	26	1,237,391	$ 46,398	4.70%
2017	31	1,564,032	$ 70,878	4.70%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 33 for past benefit provision changes.

Division 10 - Slrd

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	$ 3,378,438	$ 3,090,402	91%	$ 288,036
2008	3,707,629	3,258,418	88%	449,211
2009	4,450,410	3,399,694	76%	1,050,716
2010	4,574,149	3,331,561	73%	1,242,588
2011	4,503,788	3,287,473	73%	1,216,315
2012	4,640,934	3,163,030	68%	1,477,904
2013	4,703,210	3,072,851	65%	1,630,359
2014	4,661,413	2,968,050	64%	1,693,363
2015	4,888,879	2,841,112	58%	2,047,767
2016	4,888,329	2,734,715	56%	2,153,614

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 actuarial valuations.

Table 9-10: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution[1]	Employee Contribution Rate[2]
	Number	Annual Payroll		
2007	10	$ 480,485	7.44%	4.70%
2008	10	499,376	10.07%	4.70%
2009	10	500,635	17.11%	4.70%
2010	10	506,777	19.04%	4.70%
2011	8	405,219	22.41%	4.70%
2012	7	349,676	31.53%	4.70%
2013	7	357,819	$ 9,949	4.70%
2014	7	363,548	$ 10,536	4.70%
2015	5	259,006	$ 12,872	4.70%
2016	5	266,322	$ 13,717	4.70%
2017	0	0	$ 0	4.70%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 33 for past benefit provision changes.

Division 11 - Non-Union

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	$ 1,581,996	$ 1,120,193	71%	$ 461,803
2008	1,678,615	1,181,275	70%	497,340
2009	1,711,053	1,262,222	74%	448,831
2010	1,813,902	1,348,594	74%	465,308
2011	2,012,966	1,376,198	68%	636,768
2012	2,059,655	1,388,507	67%	671,148
2013	2,127,061	1,438,530	68%	688,531
2014	2,168,744	1,495,066	69%	673,678
2015	2,338,899	1,555,343	67%	783,556
2016	2,362,710	1,762,613	75%	600,097

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 actuarial valuations.

Table 9-11: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution[1]	Employee Contribution Rate[2]
	Number	Annual Payroll		
2007	3	$ 245,289	15.82%	4.70%
2008	4	315,643	14.07%	4.70%
2009	4	320,836	13.40%	4.70%
2010	4	325,053	14.00%	4.70%
2011	3	239,277	20.82%	4.70%
2012	3	245,800	22.25%	4.70%
2013	3	257,925	$ 4,508	4.70%
2014	3	261,343	$ 4,477	4.70%
2015	3	278,644	$ 5,522	4.70%
2016	3	283,136	$ 4,434	4.70%
2017	0	0	$ 0	4.70%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 33 for past benefit provision changes.

Division 12 - All Employees Post 12/31/2012

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2013	$ 6,180	$ 7,309	118%	$ (1,129)
2014	25,924	27,951	108%	(2,027)
2015	73,593	73,023	99%	570
2016	155,898	132,468	85%	23,430
2017	233,032	217,937	94%	15,095

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 actuarial valuations.

Table 9-12: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution[1]	Employee Contribution Rate[2]
	Number	Annual Payroll		
2013	3	$ 132,521	5.23%	6.00%
2014	6	234,258	5.41%	6.00%
2015	10	407,849	5.65%	6.00%
2016	11	509,180	$ 2,350	6.00%
2017	10	496,976	$ 2,286	6.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 33 for past benefit provision changes.

Division 13 - All Employees after 2/1/16

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2016	$ 5,641	$ 7,102	126%	$ (1,461)
2017	22,568	27,859	123%	(5,291)

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 actuarial valuations.

Table 9-13: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution[1]	Employee Contribution Rate[2]
	Number	Annual Payroll		
2016	4	$ 117,308	3.43%	4.00%
2017	10	351,640	4.00%	4.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 33 for past benefit provision changes.

Division S1 - Surplus - Unassoc.

Table 8-S1: Comparative Schedule

Valuation Date December 31	Valuation Assets
2017	$ 861,034

Division 01 - All Employees hired pre 2013

Table 10-01: Layered Amortization Schedule

				Amounts for Fiscal Year Beginning 1/1/2019		
Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
Initial	12/31/2015	$ 6,363,902	23	$ 6,608,732	21	$ 464,472
(Gain)/Loss	12/31/2016	426,274	22	462,388	21	32,496
(Gain)/Loss	12/31/2017	809,859	21	872,623	21	61,332
Merged Division Balance	12/31/2017			2,786,126	21	195,816
Total				**$ 10,729,869**		**$ 754,116**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 12 - All Employees Post 12/31/2012

Table 10-12: Layered Amortization Schedule

				Amounts for Fiscal Year Beginning 1/1/2019		
Type of UAL	**Date Established**	**Original Balance[1]**	**Original Amortization Period[2]**	**Outstanding UAL Balance[3]**	**Remaining Amortization Period[2]**	**Annual Amortization Payment**
Initial	12/31/2015	$ 570	23	$ 1,822	21	$ 132
(Gain)/Loss	12/31/2016	21,070	22	22,855	21	1,608
(Gain)/Loss	12/31/2017	(9,415)	21	(10,145)	21	(708)
Total				**$ 14,532**		**$ 1,032**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 13 - All Employees after 2/1/16

Table 10-13: Layered Amortization Schedule

				Amounts for Fiscal Year Beginning 1/1/2019		
Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
(Gain)/Loss	12/31/2016	$ (1,461)	15	$ (1,546)	14	$ (144)
(Gain)/Loss	12/31/2017	(3,718)	15	(4,006)	15	(360)
Total				**$ (5,552)**		**$ (504)**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

GASB 68 Information

The following information has been prepared to provide some of the information necessary to complete GASB Statement No. 68 disclosures. Statement 68 is effective for fiscal years beginning after June 15, 2014. Additional resources, including an Implementation Guide, are available at www.mersofmich.com.

Actuarial Valuation Date:	12/31/2017
Measurement Date of Total Pension Liability (TPL):	12/31/2017

At 12/31/2017, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits:	76
Inactive employees entitled to but not yet receiving benefits:	3
Active employees:	51
	130

Covered employee payroll: (Needed for Required Supplementary Information)	$	2,412,648
Average expected remaining service lives of all employees (active and inactive):		3
Total Pension Liability as of 12/31/2016 measurement date:	$	23,237,923
Total Pension Liability as of 12/31/2017 measurement date:	$	23,546,422
Service Cost for the year ending on the 12/31/2017 measurement date:	$	246,970

Change in the Total Pension Liability due to:

- Benefit changes[1]:	$	0
- Differences between expected and actual experience[2]:	$	70,379
- Changes in assumptions[2]:	$	0

[1] A change in liability due to benefit changes is immediately recognized when calculating pension expense for the year.

[2] Changes in liability due to differences between actual and expected experience, and changes in assumptions, are recognized in pension expense over the average remaining service lives of all employees.

Sensitivity of the Net Pension Liability to changes in the discount rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Change in Net Pension Liability as of 12/31/2017:	$ 2,270,017	-	$ (1,948,905)

Note: The current discount rate shown for GASB 68 purposes is higher than the MERS assumed rate of return. This is because for GASB 68 purposes, the discount rate must be gross of administrative expenses, whereas for funding purposes it is net of administrative expenses.

GASB 68 Information

This page is for those municipalities who need to “roll-forward” their total pension liability due to the timing of completion of the actuarial valuation in relation to their fiscal year-end.

The following information has been prepared to provide some of the information necessary to complete GASB Statement No. 68 disclosures. Statement 68 is effective for fiscal years beginning after June 15, 2014. Additional resources, including an Implementation Guide, are available at www.mersofmich.com.

Actuarial Valuation Date:		12/31/2017
Measurement Date of Total Pension Liability (TPL):		12/31/2018
At 12/31/2017, the following employees were covered by the benefit terms:		
Inactive employees or beneficiaries currently receiving benefits:		76
Inactive employees entitled to but not yet receiving benefits:		3
Active employees:		51
		130
Covered employee payroll: (Needed for Required Supplementary Information)	$	2,412,648
Average expected remaining service lives of all employees (active and inactive):		3
Total Pension Liability as of 12/31/2017 measurement date:	$	23,447,538
Total Pension Liability as of 12/31/2018 measurement date:	$	23,698,251
Service Cost for the year ending on the 12/31/2018 measurement date:	$	248,958
Change in the Total Pension Liability due to:		
- Benefit changes[1]:	$	0
- Differences between expected and actual experience[2]:	$	106,794
- Changes in assumptions[2]:	$	0

[1] A change in liability due to benefit changes is immediately recognized when calculating pension expense for the year.

[2] Changes in liability due to differences between actual and expected experience, and changes in assumptions, are recognized in pension expense over the average remaining service lives of all employees.

Sensitivity of the Net Pension Liability to changes in the discount rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Change in Net Pension Liability as of 12/31/2018:	$ 2,259,417	-	$ (1,942,400)

Note: The current discount rate shown for GASB 68 purposes is higher than the MERS assumed rate of return. This is because for GASB 68 purposes, the discount rate must be gross of administrative expenses, whereas for funding purposes it is net of administrative expenses.

Benefit Provision History

The following benefit provision history is provided by MERS. Any corrections to this history or discrepancies between this information and information displayed elsewhere in the valuation report should be reported to MERS. All provisions are listed by date of adoption.

01 - All Employees hired pre 2013

8/1/2017	Day of work defined as 88 Hours a Month for All employees.
8/1/2017	Exclude Temporary Employees requiring less than 6 months
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2016	Flexible E $10 Monthly COLA Adopted (01/01/2016)
1/1/2010	Flexible E $15.00 Monthly COLA Adopted (01/01/2010)
1/1/2009	Flexible E $10.00 Monthly COLA Adopted (01/01/2009)
1/1/2008	Flexible E $10.00 Monthly COLA Adopted (01/01/2008)
9/1/2007	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2007	Flexible E $15.00 Monthly COLA Adopted (01/01/2007)
1/1/2006	Flexible E $20.00 Monthly COLA Adopted (01/01/2006)
1/1/2005	Flexible E $20.00 Monthly COLA Adopted (01/01/2005)
4/1/2004	Benefit B-3 (80% max)
4/1/2004	Member Contribution Rate 4.70%
1/1/2004	Flexible E $20.00 Monthly COLA Adopted (01/01/2004)
1/1/2003	Flexible E $30.00 Monthly COLA Adopted (01/01/2003)
1/1/2002	Flexible E $30.00 Monthly COLA Adopted (01/01/2002)
1/1/2001	Flexible E $20.00 Monthly COLA Adopted (01/01/2001)
1/1/2000	Flexible E $15.00 Monthly COLA Adopted (01/01/2000)
1/1/1999	Flexible E $10.00 Monthly COLA Adopted (01/01/1999)
1/1/1998	Benefit F55 (With 25 Years of Service)
1/1/1998	Flexible E $20.00 Monthly COLA Adopted (01/01/1998)
1/1/1995	E 2% COLA Adopted (01/01/1995)
1/1/1993	E 2% COLA Adopted (01/01/1993)
1/1/1992	Benefit B-2
1/1/1992	E 2% COLA Adopted (01/01/1992)
1/1/1991	E 2% COLA Adopted (01/01/1991)
4/1/1977	Benefit C-1 (Old)
2/28/1975	Exclude Temporary Employees
2/15/1971	Covered by Act 88
7/1/1946	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1946	10 Year Vesting
7/1/1946	Benefit C (Old)
7/1/1946	Member Contribution Rate 3.00% Under $4,200.00 - Then 5.00%
7/1/1946	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - Slrd

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2016	Flexible E $10 Monthly Adopted (01/01/2016)

10 - Slrd

1/1/2010	Flexible E $15.00 Monthly COLA Adopted (01/01/2010)
1/1/2009	Flexible E $10.00 Monthly COLA Adopted (01/01/2009)
1/1/2008	Flexible E $10.00 Monthly COLA Adopted (01/01/2008)
3/1/2007	Benefit B-3 (80% max)
1/1/2007	Flexible E $15.00 Monthly COLA Adopted (01/01/2007)
1/1/2006	Flexible E $20.00 Monthly COLA Adopted (01/01/2006)
1/1/2005	Flexible E $20.00 Monthly COLA Adopted (01/01/2005)
1/1/2004	Flexible E $20.00 Monthly COLA Adopted (01/01/2004)
1/1/2003	Flexible E $30.00 Monthly COLA Adopted (01/01/2003)
1/1/2002	Benefit F55 (With 25 Years of Service)
1/1/2002	Member Contribution Rate 4.70%
1/1/2002	Flexible E $30.00 Monthly COLA Adopted (01/01/2002)
1/1/2001	Flexible E $20.00 Monthly COLA Adopted (01/01/2001)
1/1/2000	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2000	Flexible E $15.00 Monthly COLA Adopted (01/01/2000)
1/1/1999	Flexible E $10.00 Monthly COLA Adopted (01/01/1999)
1/1/1998	Flexible E $20.00 Monthly COLA Adopted (01/01/1998)
1/1/1995	E 2% COLA Adopted (01/01/1995)
1/1/1993	E 2% COLA Adopted (01/01/1993)
1/1/1992	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1992	10 Year Vesting
1/1/1992	Benefit B-2
1/1/1992	Member Contribution Rate 3.00% Under $4,200.00 - Then 5.00%
1/1/1992	E 2% COLA Adopted (01/01/1992)
1/1/1991	E 2% COLA Adopted (01/01/1991)
2/28/1975	Exclude Temporary Employees
2/15/1971	Covered by Act 88
7/1/1946	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

11 - Non-Union

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2016	Flexible E $10 Monthly COLA Adopted (01/01/2016)
1/1/2009	Flexible E $10.00 Monthly COLA Adopted (01/01/2009)
1/1/2008	Flexible E $10.00 Monthly COLA Adopted (01/01/2008)
1/1/2007	Flexible E $15.00 Monthly COLA Adopted (01/01/2007)
1/1/2006	Flexible E $20.00 Monthly COLA Adopted (01/01/2006)
6/1/2004	Benefit FAC-3 (3 Year Final Average Compensation)
6/1/2004	10 Year Vesting
6/1/2004	Benefit B-3 (80% max)
6/1/2004	Benefit F55 (With 25 Years of Service)
6/1/2004	Member Contribution Rate 4.70%
2/28/1975	Exclude Temporary Employees
2/15/1971	Covered by Act 88
7/1/1946	Fiscal Month - January

11 - Non-Union

	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

12 - All Employees Post 12/31/2012

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2013	Day of work defined as 88 Hours a Month for All employees.
1/1/2013	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2013	Exclude Temporary Employees requiring less than 12 months
1/1/2013	10 Year Vesting
1/1/2013	Benefit B-3 (80% max)
1/1/2013	Benefit F55 (With 25 Years of Service)
1/1/2013	Member Contribution Rate 6.00%
2/15/1971	Covered by Act 88
7/1/1946	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

13 - All Employees after 2/1/16

12/1/2016	Service Credit Purchase Estimates - Yes
2/1/2016	Day of work defined as 80 Hours a Month for All employees.
2/1/2016	Benefit FAC-5 (5 Year Final Average Compensation)
2/1/2016	Exclude Temporary Employees requiring less than 12 months
2/1/2016	10 Year Vesting
2/1/2016	1.5% multiplier (80% max)
2/1/2016	Participant Contribution Rate 4%
2/15/1971	Covered by Act 88
7/1/1946	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

Details on MERS plan provisions, actuarial assumptions, and actuarial methodology can be found in the Appendix. Some actuarial assumptions are specific to this municipality and its divisions. These are listed below.

Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	5.00%

Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	100%

Miscellaneous and Technical Assumptions

Loads – None.

Amortization Policy for Closed Divisions

Closed Division	Amortization Option
All Closed Divisions	Non-Accelerated Amortization

Please see the Appendix on the MERS website for a detailed description of the amortization options available for closed divisions within an open municipality.